

Notice of Allowability

Application No.

10/721,851

Examiner

Callie E. Shosho

Applicant(s)

WONG ET AL.

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 10/10/06 and telephonic interview conducted 11/30/06.
2. ☒ The allowed claim(s) is/are 1-80.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 11/30/06.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

(1) In the specification, page 1, line 5, after "No.", delete "(not yet assigned; Attorney Docket Number D/A1388)," and insert "10/722,164, now U.S. Patent 6,878,198,".

(2) In the specification, page 2, line 4, after "No.", delete "(not yet assigned; Attorney Docket Number D/A3399)," and insert "10/722,162, now U.S. Patent 6,858,070,".

(3) Claim 1, line 15, after "form" and before "ink", delete "an" and insert "the".

(4) Claim 54, line 4, after "temperature" and before ":", insert "and below about the peak melting temperature of the dispersant".

(5) Claim 55, line 4, after "temperature" and before ":", insert "and below about the peak melting temperature of the dispersant".

(6) Claim 56, line 4, after "temperature" and before ":", insert "and below about the peak melting temperature of the dispersant".

(7) Claim 57, line 3, after “temperature” and before “.”, insert “and at or above about the peak crystallization temperature of the dispersant”.

(8) Claim 58, line 3, after “temperature” and before “.”, insert “and at or above about the peak crystallization temperature of the dispersant”.

(9) Claim 59, line 3, after “temperature” and before “.”, insert “and at or above about the peak crystallization temperature of the dispersant”.

(10) Claim 78, line 14, after “form” and before “ink”, delete “an” and insert “the”.

(11) Claim 80, line 16, after “forming” and before “ink”, delete “an” and insert “the”.

2. Authorization for this examiner’s amendment was given in a telephone interview with Judith Byorick on 11/30/06.

Statement of Reasons for Allowance

3. The present claims are allowable over the “closest” prior art Fujiyama et al. (U.S. 5,906,678) and Oliver et al. (U.S. 5,593,486) for the following reasons:

Fujiyama et al. disclose process for preparing hot melt, i.e. phase change, ink comprising ink carrier and 3-20% of at least one or more coloring agents that include pigment wherein the method comprises admixing carbon black and polyethylene, extruding the mixture, adding non-polar component, i.e. wax, and then subjecting the resulting mixture to mixing using three roll mill.

However, there is no disclosure in Fujiyama et al. of polar component that is a dispersant as required in present claim 1, of polar component comprising tetra-amide as required in each of present claims 78 and 80, or that the pigment has either acidic groups or basic groups on the surface as required in present claim 80. Additionally, there is no disclosure or suggestion in Fujiyama et al. of extruding mixture of pigment and dispersant in an extruder at a temperature that is at or above about the peak crystallization temperature of the dispersant and below about the peak melting temperature of the dispersant as required in present claim 1 and no disclosure or suggestion in Fujiyama et al. of extruding mixture of pigment and tetra-amide in an extruder at a temperature that is at or above about the peak crystallization temperature of the tetra-amide and below about the peak melting temperature of the tetra-amide as required in each of present claims 78 and 80.

Oliver et al. disclose hot melt, i.e. phase change, ink comprising pigment and ink vehicle comprising monoamide and tetra-amide. Oliver et al. disclose process for preparing the hot melt

ink that includes combining all the ingredients, heating the mixture to its melting point, and stirring the mixture to obtain homogenous uniform melt.

However, there is no disclosure in Oliver et al. of extrusion and thus, no disclosure or suggestion of extruding mixture of pigment and dispersant (i.e. tetra-amide) in an extruder at a temperature that is at or above about the peak crystallization temperature of the dispersant and below about the peak melting temperature of the dispersant as required in all the present claims.

As set forth above, neither Fujiyama et al. or Oliver et al. disclose or suggest extruding mixture of pigment and dispersant (i.e. tetra-amide) in an extruder at a temperature that is at or above about the peak crystallization temperature of the dispersant and below about the peak melting temperature of the dispersant as presently claimed. This is especially significant in light of the comparative data set forth in the present specification (pages 59-60). The data compares process within the scope of the present claims, i.e. extruding pigment and dispersant at a temperature that is at or above about the peak crystallization temperature of the dispersant and below about the peak melting temperature of the dispersant (examples III, IV, VII, VIII), with process outside the scope of the present claims, i.e. extruding pigment and dispersant at a temperature that is below the crystallization temperature of the dispersant (examples I, II) or at the melting temperature of the dispersant (examples V, VI). It is shown that the process of the present invention produces phase changes inks that are superior in terms of wetting of the pigment particles, dispersion of the pigment, and filtration. Thus, applicants' data is successful in establishing unexpected or surprising results over the cited prior art.

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Further, it is noted that applicants' amendment filed 10/10/06 overcomes the claim objections of record. Further, applicants' arguments set forth on pages 21-22 of the amendment filed 10/10/06 overcome the 35 USC 112, second paragraph rejections of record.

In light of the above, it is clear that the objections and rejections of record are untenable and so, the present claims are passed to issue.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
11/30/06